

**Notice of Allowability**

Application No.

10/541,644

Examiner

Rip A. Lee

Applicant(s)

CARPENTIER ET AL.

Art Unit

1713

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address--**

All claims being allowable, PROSECUTION ON THE MERITS IS (OR REMAINS) CLOSED in this application. If not included herewith (or previously mailed), a Notice of Allowance (PTOL-85) or other appropriate communication will be mailed in due course. **THIS NOTICE OF ALLOWABILITY IS NOT A GRANT OF PATENT RIGHTS.** This application is subject to withdrawal from issue at the initiative of the Office or upon petition by the applicant. See 37 CFR 1.313 and MPEP 1308.

1. ☒ This communication is responsive to December 18, 2006.
2. ☒ The allowed claim(s) is/are 15-34.
3. ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
  - a) ☐ All b) ☐ Some\* c) ☐ None of the:
    1. ☐ Certified copies of the priority documents have been received.
    2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
    3. ☐ Copies of the certified copies of the priority documents have been received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

\* Certified copies not received: \_\_\_\_\_.

Applicant has THREE MONTHS FROM THE "MAILING DATE" of this communication to file a reply complying with the requirements noted below. Failure to timely comply will result in ABANDONMENT of this application.

**THIS THREE-MONTH PERIOD IS NOT EXTENDABLE.**

4. ☐ A SUBSTITUTE OATH OR DECLARATION must be submitted. Note the attached EXAMINER'S AMENDMENT or NOTICE OF INFORMAL PATENT APPLICATION (PTO-152) which gives reason(s) why the oath or declaration is deficient.
5. ☐ CORRECTED DRAWINGS ( as "replacement sheets") must be submitted.
  - (a) ☐ including changes required by the Notice of Draftsperson's Patent Drawing Review ( PTO-948) attached
    - 1) ☐ hereto or 2) ☐ to Paper No./Mail Date \_\_\_\_\_.
  - (b) ☐ including changes required by the attached Examiner's Amendment / Comment or in the Office action of Paper No./Mail Date \_\_\_\_\_.

Identifying indicia such as the application number (see 37 CFR 1.84(c)) should be written on the drawings in the front (not the back) of each sheet. Replacement sheet(s) should be labeled as such in the header according to 37 CFR 1.121(d).
6. ☐ DEPOSIT OF and/or INFORMATION about the deposit of BIOLOGICAL MATERIAL must be submitted. Note the attached Examiner's comment regarding REQUIREMENT FOR THE DEPOSIT OF BIOLOGICAL MATERIAL.

**Attachment(s)**

1. ☒ Notice of References Cited (PTO-892)
2. ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3. ☐ Information Disclosure Statements (PTO/SB/08),  
Paper No./Mail Date \_\_\_\_\_
4. ☐ Examiner's Comment Regarding Requirement for Deposit  
of Biological Material
5. ☐ Notice of Informal Patent Application
6. ☐ Interview Summary (PTO-413),  
Paper No./Mail Date \_\_\_\_\_
7. ☒ Examiner's Amendment/Comment
8. ☒ Examiner's Statement of Reasons for Allowance
9. ☐ Other \_\_\_\_\_

### EXAMINER'S AMENDMENT

An examiner's amendment to the record appears below. Should the changes and/or additions be unacceptable to applicant, an amendment may be filed as provided by 37 CFR 1.312. To ensure consideration of such an amendment, it MUST be submitted no later than the payment of the issue fee.

Authorization for this examiner's amendment was given in a telephone interview with Tenley R. Krueger on February 26, 2007.

Claim 15, line 5      insert "of" between the word "metal" and "Group"

Claim 23, line 1      replace "In the preparation of" with "A method of preparing"

Claim 23, line 5      insert "of" between the word "metal" and "Group"

Claim 23, line 7      replace "process" with "method"

Claim 29, line 7      insert "of" between the word "metal" and "Group"

***Allowable Subject Matter***

The following is an examiner's statement of reasons for allowance: Claims 15-34 are allowed over the closest references cited below.

The present invention is drawn to a metallocene catalyst component characterized by the formula  $(\text{FluR}''\text{Cp})\text{M}(\eta^3\text{-C}_3\text{R}'_5)(\text{ether})_n$  where M is a group III metal, R'' is a structural bridge between (un)substituted fluorenyl, Flu, and (un)substituted cyclopentadienyl, Cp, and R' is hydrogen, a silyl group, or a hydrocarbyl group (see claim for full structural details). Another aspect of the invention is a method for preparing said metallocene catalyst component and a process for polymerization comprising contacting ethylenically unsaturated monomer in the presence of catalyst comprising said metallocene catalyst component.

Yasuda *et al.* (JP 7-258319) teaches polymerization of olefin in the presence of a catalyst comprising a metallocene of general formula  $\text{Flu}(\text{R}_9)_n\text{CpM}(\text{R}_{10})(\text{X})_m$  where M is Sc, Y or a lanthanide, R<sub>9</sub> is a structural bridge, R<sub>10</sub> is a C<sub>1</sub>-C<sub>10</sub> hydrocarbon group or an alkylsilyl group, and X is a solvent molecule. One learns from the patent that R<sub>10</sub> is a methyl group or *bis*(trimethylsilyl)methyl group, and it may be concluded that the term "hydrocarbon group" in the text would refer to alkyl groups. The reference does not teach use of unsaturated hydrocarbon groups, and one having ordinary skill in the art would not have found it obvious to use a  $\eta^3$ -allyl ligand as the hydrocarbon group for metallocenes in Yasuda *et al.*

Qian *et al.* (*Organometallics*, 2000) discloses the bridged dimers  $[\text{Me}_2\text{Si}(\text{C}_5\text{H}_4)(\text{C}_{13}\text{H}_8)\text{YCl}]_2$  and  $[\text{Ph}_2\text{Si}(\text{C}_5\text{H}_4)(\text{C}_{13}\text{H}_8)\text{YCl}]_2$  as well as monomeric lanthanocenes,  $\text{Me}_2\text{Si}(\text{C}_5\text{H}_4)(\text{C}_{13}\text{H}_8)\text{LnN}(\text{SiMe}_3)_2$  and  $\text{Me}_2\text{Si}(\text{C}_5\text{H}_4)(\text{C}_{13}\text{H}_8)\text{LnCH}(\text{SiMe}_3)_2$  wherein Ln = Dy and Er. The compounds do not contain the requisite  $\eta^3$ -allyl ancillary ligand.

Lee *et al.* (*Organometallics*, 1999) discloses the group III "ate" complex,  $[\text{Me}_2\text{Si}(\text{C}_5\text{Me}_4)(\text{C}_{13}\text{H}_8)\text{YCl}_2]\text{Li}(\text{OEt})_2$  and the corresponding neutral complex,  $\text{Me}_2\text{Si}(\text{C}_5\text{Me}_4)(\text{C}_{13}\text{H}_8)\text{YN}(\text{SiMe}_3)_2$ . Clearly, these compounds do not possess the structural features of the compound of the instant invention.

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Desurmont *et al.* (WO 00/56778) teaches a metallocene of general formula  $X_y(R_{1j}Cp)_2Y-H$  for polymerization of alpha olefins. These compounds do not possess the structural features of the compound of the instant invention.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rip A. Lee whose telephone number is (571)272-1104. The examiner can be reached on Monday through Friday from 9:00 AM - 5:00 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu, can be reached at (571)272-1114. The fax phone number for the organization where this application or proceeding is assigned is (571)273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on the access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll free).

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February 28, 2007



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